

AMENDMENTS TO THE CLAIMS

1. **(Canceled)**

2. **(Currently Amended)** A semiconductor device comprising:

a semiconductor chip having a main surface provided with an integrated circuit
including a photoelectric converter;
a plurality of electrodes formed in a vicinity of a periphery of the integrated circuit;
a sealing resin for sealing the main surface of the semiconductor chip and at least a
first side surface of each of the electrodes, the sealing resin formed so as to have an opening over
a surface of the integrated circuit; and

a light-transmitting cap disposed so as to cover the opening of the sealing resin,

~~A semiconductor device according to claim 1,~~

wherein the electrodes are electrically connected to the integrated circuit and to
respective external terminals,

wherein each of the electrodes has a columnar shape and is provided with a step at a
top surface thereof, and

wherein the light-transmitting cap is engaged with the step of each of the electrodes.

3. **(Currently Amended)** A semiconductor device comprising:

a semiconductor chip having a main surface provided with an integrated circuit

including a photoelectric converter;

a plurality of electrodes formed in a vicinity of a periphery of the integrated circuit;

a sealing resin for sealing the main surface of the semiconductor chip and at least a first side surface of each of the electrodes, the sealing resin formed so as to have an opening over a surface of the integrated circuit; and

a light-transmitting cap disposed so as to cover the opening of the sealing resin,

~~A semiconductor device according to claim 1, wherein the light-transmitting cap is provided with a wiring for connecting the electrodes to respective external terminals.~~

4. (Currently Amended) A semiconductor device comprising:

a semiconductor chip having a main surface provided with an integrated circuit including a photoelectric converter;
a plurality of electrodes formed in a vicinity of a periphery of the integrated circuit;
a sealing resin for sealing the main surface of the semiconductor chip and at least a first side surface of each of the electrodes, the sealing resin formed so as to have an opening over a surface of the integrated circuit; and

a light-transmitting cap disposed so as to cover the opening of the sealing resin,

~~A semiconductor device according to claim 1, wherein a protection film having an opening is provided over the main surface of the semiconductor chip and wherein the opening is positioned over the main surface of the semiconductor chip.~~

5. (Previously Presented) A semiconductor device comprising:

a semiconductor chip which has a main surface provided with an integrated circuit including a photoelectric converter;
a plurality of electrode pads formed on the main surface;

a plurality of first wiring patterns, each of which extends over the main surface and each of which has a first end connected to a corresponding one of the electrode pads;

a plurality of bump electrodes, each of which has a bottom surface contacting with one a second end of a corresponding one of the first wiring patterns;

a sealing resin which seals surfaces of the first wiring patterns and sides of the bump electrodes, wherein the electrode pads, the first wiring patterns, the bump electrodes and the sealing resin are positioned at a periphery of the semiconductor chip;

a plurality of external terminals, each of which is formed on a top surface of a corresponding one of the bump electrodes; and

a light-transmitting cap provided on the top surfaces of the bump electrodes so as to cover a center of the semiconductor chip.

6. (Previously Presented) A semiconductor device according to claim 5,
wherein at least some of the bump electrodes have a step at the top surface thereof, and
wherein the light-transmitting cap is engaged with the steps.

7. (Previously Presented) A semiconductor device according to claim 5, further comprising second wiring patterns which connect the bump electrodes to respective ones of the external terminals, wherein the second wiring patterns are formed on the light-transmitting cap.

8. (Previously Presented) A semiconductor device according to claim 5, further comprising a protection film having an opening which is provided over the main surface of the

semiconductor chip, wherein the opening is positioned over the main surface of the semiconductor chip.

9. (Original) A semiconductor device according to claim 5, wherein the bump electrodes are arranged in a matrix form.

10. (Previously Presented) A semiconductor device comprising:

a semiconductor chip which has a main surface provided with an integrated circuit including a photoelectric converter;

a plurality of electrode pads formed on the main surface;

a plurality of redistribution wiring patterns, each of which extends over the main surface and each of which has a first end connected to a corresponding one of the electrode pads;

a plurality of bump electrodes, each of which has a bottom surface contacting with a second end of a corresponding one of the redistribution wiring patterns;

a sealing resin which seals surfaces of the redistribution wiring patterns and sides of the bump electrodes, wherein the electrode pads, the redistribution wiring patterns, the bump electrodes and the sealing resin are positioned at a periphery of the semiconductor chip;

a plurality of external terminals, each of which is formed on a top surface of a corresponding one of the bump electrodes; and

a light-transmitting cap provided on the top surfaces of the bump electrodes so as to cover a center of the semiconductor chip.

11. (Previously Presented) A semiconductor device according to claim 10,

wherein at least some of the bump electrodes have a step at the top surface thereof, and
wherein the light-transmitting cap is engaged with the steps.

12. (Previously Presented) A semiconductor device according to claim 10, further comprising wiring patterns which connect the bump electrodes to respective external terminals, wherein the wiring patterns are formed on the light-transmitting cap.

13. (Previously Presented) A semiconductor device according to claim 10, further comprising a protection film having an opening which is provided over the main surface of the semiconductor chip, wherein the opening is positioned over the main surface of the semiconductor chip.

14. (Original) A semiconductor device according to claim 10, wherein the bump electrodes are arranged in a matrix form.

15. (Cancelled)